

REMARKS

Claims 1-5 are pending. By this Response, claims 1 and 4 are amended and claim 5 added. Reconsideration and allowance based on the above amendments and following remarks are respectfully requested.

Claim 1 recites, *inter alia*, a solid-state electronic imaging device comprising: a lot of photoelectric conversion elements arranged in the column direction and the row direction; one or more vertical transfer paths for transferring signal charges; one or more transfer gates for respectively shifting the signal charges to said vertical transfer paths upon receipt of transfer gate pulses; a horizontal transfer path for horizontally transferring the signal charges transferred from the vertical transfer paths; color filters respectively formed on the photoelectric conversion elements and arranged such that the order of color signal components respectively represented by the signal charges substantially corresponding to one row which are inputted to the horizontal transfer path in reading out all pixels is a repetition of a red signal component, a green signal component, a blue signal component, and a green signal component; a readout control that applies the transfer gate pulses to said transfer gates; and wherein a plurality of the signal charges which are adjacent to each other are mixed in the horizontal transfer path.

Claim 4 recites, *inter alia*, a solid-state electronic imaging device comprising: a plurality of photoelectric conversion elements arranged in the column direction and the row direction; one or more vertical transfer paths for transferring signal

charges; one or more transfer gates for respectively shifting the signal charges; and a horizontal transfer path for horizontally transferring the signal charge transferred from the horizontal transfer paths, where a method of controlling the operation of the solid-state electronic imaging device comprises: forming and arranging color filters respectively on the photoelectric conversion elements such that the order of color signal components respectively represented by the signal charges substantially corresponding to one row which are inputted to the horizontal transfer path in reading out all pixels is a repetition of a red signal component, a green signal component; applying the transfer gate pulses to said transfer gates; and mixing a plurality of the signal charges which are adjacent to each other, in the horizontal transfer path.

Each of the above claims recite a specific arrangement of photoelectric elements and the specific color components associated with the photoelectric elements. As recited in the claims, the adjacent signal charge is read out are mixed such that the horizontal transfer path is a repetition of a red signal component, green signal component, blue signal component and green signal component. Only one horizontal transfer path is used.

The above claimed features are easily illustrated with respect to Fig. 1. The $(8m + 1)$ -th ROW contains all green photoelectric elements while the adjacent $(8m + 1)$ -th ROW is offset to the $(8m + 1)$ -th ROW and contains alternating red and blue photoelectric elements. Since only a single horizontal transfer path is used,

these two rows will be mixed to form signals that are repetition of red, green, blue, green signals in the horizontal transfer path.

In contrast, Oda teaches a system in which a matrix of photoelectric elements includes a first column of green elements, a second column of alternating blue and red elements and a third column of green elements and a fourth column of alternating red and blue elements. Two horizontal transfer paths are used in Oda's system.

An embodiment of Oda, a row of photoelectric signals is directly transferred onto the horizontal transfer path. See Figs. 11(a) and 11(b). In an alternative embodiment, the separate columns of photoelectric element signal are transferred to a horizontal transfer path while the adjacent column is transferred to the second horizontal transfer path. See Figs. 8 and 13. Therefore, all the green signals will be on one horizontal transfer path while the alternating red and blue signals will be transferred on the second horizontal transfer path.

Oda, however, does not teach or suggest mixing adjacent signals in the horizontal transfer path. In Oda, either the entire row is transferred directly to the horizontal transfer path or each separate column is directly transferred to one of the two horizontal transfer paths. Nowhere is it taught or suggested to mix adjacent signal charges in the horizontal transfer path to achieve a red, green, blue, green signal readout.

Further, Ishihara fails to make up for Oda's deficiencies. Ishihara has been applied to teach the use of a gate transfer. Ishihara, however, fails to teach or

suggest, the features of the claims absent in Oda, specifically the mixing of adjacent signal charges in the horizontal transfer path.

In view of the above, applicant respectfully submit that the combination of Oda and Ishihara fail to teach each and every feature of the claims as required. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For at least these reasons, it is respectfully submitted that claims 1-5 are distinguishable over the cited art. Favorable consideration and prompt allowance are earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant respectfully petitions for a three (3) month extension of time for filing a reply in connection with the present application, and the required fee of \$1020.00 is attached hereto.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings (Reg. No. 48,917) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No.

Appl. No. 09/866,687

02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17;
particularly, extension of time fees.

Respectfully submitted,

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Attachment(s)